

DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

[Docket No.:040108008-4008-01]

RIN: 0693-ZA53

Summer Undergraduate Research Fellowships (SURF) Gaithersburg and Boulder Programs;

Availability of Funds

AGENCY: National Institute of Standards and Technology, Commerce.

ACTION: Notice.

SUMMARY: The National Institute of Standards and Technology (NIST) announces that the 2004 Summer Undergraduate Research Fellowships (SURF) Gaithersburg and Boulder programs are soliciting applications for financial assistance for FY 2004. The SURF Gaithersburg program is soliciting applications in the areas of Electronics and Electrical Engineering, Manufacturing Engineering, Chemical Science and Technology, Physics, Materials Science and Engineering, Building and Fire Research, and Information Technology. The SURF Boulder program is soliciting applications in the areas of Electronics and Electrical Engineering, Chemical Science and Technology, Physics, Materials Science and Engineering, and Information Technology. Applications for the Gaithersburg and Boulder programs are separate. Application

to one program does not constitute application to the other, and applications will not be exchanged between the Gaithersburg and Boulder programs. If applicants wish to be considered at both sites, two separate applications must be submitted.

In Gaithersburg, Maryland, the programs “*SURFing the Electronics and Electrical Engineering Laboratory*,” “*SURFing the Manufacturing Engineering Laboratory*,” “*SURFing the Chemical Science and Technology Laboratory*,” “*SURFing the Physics Laboratory*,” “*SURFing the Materials Science and Engineering Laboratory*,” “*SURFing the Building and Fire Research Laboratory*,” and “*SURFing the Information Technology Laboratory*,” will provide an opportunity for the NIST Electronics and Electrical Engineering Laboratory (EEEL), Manufacturing Engineering Laboratory (MEL), Chemical Science and Technology Laboratory (CSTL) Physics Laboratory (PL), Materials Science and Engineering Laboratory (MSEL), Building and Fire Research Laboratory (BFRL), Information Technology Laboratory (ITL), and the National Science Foundation (NSF) to join in a partnership to encourage outstanding undergraduate students to pursue careers in science and engineering. The program will provide research opportunities for students to work with internationally known NIST scientists, to expose them to cutting-edge research and promote the pursuit of graduate degrees in science and engineering.

The *SURF NIST Boulder* program will provide an opportunity for five NIST laboratories (in Boulder, Colorado) – Electronics and Electrical Engineering Laboratory (EEEL), Physics Laboratory (PL), Chemical Science and Technology Laboratory (CSTL), Materials Science and

Engineering Laboratory (MSEL) and Information Technology Laboratory (ITL) – and the National Science Foundation (NSF) to join in a partnership to encourage outstanding undergraduate students to pursue careers in science and engineering. The program will provide research opportunities for students to work with internationally known NIST scientists, exposing them to cutting-edge research, and will promote the pursuit of graduate degrees in science and engineering.

The NIST SURF Gaithersburg and Boulder Program Directors will work with appropriate department chairs, outreach coordinators, and directors of multi-disciplinary academic organizations to identify outstanding undergraduates (including graduating seniors) who would benefit from off-campus summer research in a world-class scientific environment.

#### SUPPLEMENTARY INFORMATION:

##### ***EEEL, MEL, CSTL, PL, MSEL, BFRL, and ITL SURF Gaithersburg Programs:***

I. FUNDING OPPORTUNITY DESCRIPTION: The objective of the *SURF Gaithersburg Programs* is to expose promising undergraduate students to scientific research and stimulate them to pursue advanced degrees and subsequent careers in scientific and engineering disciplines. Students, competitively selected into the program, must show promise as present or future contributors to the mission of NIST. SURF students will work one-on-one with our nation's top scientists and engineers at NIST. It is anticipated that successful SURF students will move from a position of reliance on their research advisors to one of research independence

during the twelve-week period. The program provides opportunities for our nation's next generation of scientists and engineers to engage in world-class scientific research, especially in ground-breaking areas of emerging technologies. This carries with it the hope of motivating individuals to pursue advanced degrees in physics, chemistry, materials science, engineering, mathematics, or computer science, and to consider research careers. The *SURF Gaithersburg Programs* will help to forge partnerships with NSF and with post-secondary institutions that demonstrate strong, hands-on undergraduate science curricula, especially those with a demonstrated commitment to the education of women, minorities, and students with disabilities. NIST will establish cooperative agreements with participants to further the program objective.

The following are summaries of the technical activities in the participating NIST laboratories.

NIST's EEEL strives to be the world's best source of fundamental and industrial-reference measurement methods and physical standards for electrotechnology. To be a world-class resource for semiconductor measurements, data, models, and standards focused on enhancing U.S. technological competitiveness in the world market, research is conducted in semiconductor materials, processing, devices, and integrated circuits to provide, through both experimental and theoretical work, the necessary basis for understanding measurement-related requirements in semiconductor technology. To provide the world's most technically advanced and fundamentally sound basis for all electrical measurements in the United States, the EEEL's research projects include maintaining and disseminating the national electrical standards, developing the measurement methods and services needed to support electrical materials,

components, instruments, and systems used for the generation, transmission, and application of conducted electrical power, and related activities in support of the electronics industry including research on video technology and electronic product data exchange.

NIST's MEL conducts theoretical and experimental research in length, mass, force, vibration, acoustics, and ultrasonics, as well as intelligent machines, precision control of machine tools, and information technology for the integration of all elements of a product's life cycle. Much of this applied research is devoted to overcoming barriers to the next technological revolution, in which manufacturing facilities are spread across the globe. MEL's research and development leads to standards, test methods and data that are crucial to industry's success in exploiting advanced manufacturing technology. Critical components of manufacturing at any level are measurement and measurement-related standards, not just of products, but increasingly of information about products and processes. Thus, MEL programs enhance both physical and information-based measurements and standards. Research projects can be theoretical or experimental, and will range in focus from intelligent machine control, characterizing a manufacturing process or improving product data exchange in manufacturing and related industries such as healthcare and emergency response, to the accurate measurement of an artifact's dimensions.

NIST's CSTL is the United States' primary reference laboratory for chemical measurements, entrusted with developing, maintaining, advancing, and enabling the Nation's chemical measurement system, thereby enhancing industry's productivity and competitiveness,

establishing comparability of measurements to facilitate equity of global trade, and improving public health, safety, and environmental quality. CSTL focuses its activities in measurement science research on reference methods, reference materials and reference data, and directs these efforts in support of the following specific Program areas aligned with industrial segments and National priorities: Automotive and Aerospace, Biomaterials, Pharmaceuticals and Biomanufacturing, Chemical and Allied Products, Energy Systems, Environmental Technologies and Services, Food and Nutritional Products, Forensics and Homeland Security, Health and Medical Technologies, Industrial and Analytical Instruments and Services, Microelectronics, Measurement and Standards, Data and Informatics (Knowledge Management), and Technologies for Future Measurements and Standards.

Attending to the long-term needs of many U.S. high-technology industries, NIST's PL conducts basic research in the areas of quantum, electron, optical, atomic, molecular, and radiation physics, and condensed matter. To achieve these goals, PL staff develop and utilize highly specialized equipment, such as polarized electron microscopes, scanning tunneling microscopes, lasers, and x-ray and synchrotron radiation sources. Research projects can be theoretical or experimental and will range in focus from computer modeling of fundamental processes through trapping atoms and choreographing molecular collisions, to standards for radiation therapy.

NIST's MSEL conducts basic research in the electronic, magnetic, optical, superconducting, mechanical, thermal, chemical, and structural properties of metals, ceramics, polymers, and composites. Much of this applied research is devoted to overcoming barriers to the next

technological revolution, in which individual atoms and molecules will serve as the fundamental building blocks of devices. Preparation of unique materials by atomic level tailoring of multi-layers, perfect single crystals, and nanocomposites are just some of the future technologies being developed and explored in NIST's MSEL. To achieve these goals, staff develop and utilize highly specialized equipment, such as high resolution electron microscopes, atomic force microscopes, neutron scattering instruments, x-ray diffraction sources, lasers, magnetometers, plasma furnaces, melt spinners, molecular beam epitaxy systems, and thermal spray systems. Research projects can be theoretical or experimental and will range in focus from the structural, chemical, and morphological characterization of advanced materials made in the NIST laboratories to the accurate measurement of the unique properties possessed by these special materials.

NIST's BFRL provides technical leadership and participates in developing the measurement and standards infrastructure related to materials critical to U.S. industry, academia, government, and the public. Building and Fire Research programs at NIST cover a full range of materials issues from design to processing to performance. Separate research initiatives address concrete, coating, earthquake resistance of structures, fire science and engineering, the theory and modeling of materials, and materials reliability. Through laboratory-organized consortia and one-on-one collaborations, BFRL's scientists and engineers work closely with industrial researchers, manufacturers of high-technology products, and the major users of advanced materials.

NIST's ITL responds to industry and user needs for objective, neutral tests for information technology. These are enabling tools that help companies produce the next generation of products and services, and that help industries and individuals use these complex products and services. ITL works with industry, research and government organizations to develop and demonstrate tests, test methods, reference data, proof of concept implementations and other infrastructural technologies. Program activities include: high performance computing and communications systems; emerging network technologies; access to, exchange, and retrieval of complex information; computational and statistical methods; information security; and testing tools and methods to improve the quality of software.

The authority for the *SURF Gaithersburg Programs* is as follows: 15 U.S.C. 278g-1 authorizes NIST to fund financial assistance awards to students at institutions of higher learning within the United States. These students must show promise as present or future contributors to the missions of NIST

II. AWARD INFORMATION: Funds budgeted for payment to students under these programs are stipends, not salary. The *SURF Gaithersburg Programs* will not authorize funds for indirect costs or fringe benefits. The table below summarizes the anticipated annual funding levels from the NSF to operate our REU (Research Experience for Undergraduates) programs, subject to program renewals and availability of funds. In some programs, anticipated NIST co-funding will supplement the number of awards supported. Program funding will be available to provide for



the costs of stipends (\$333.33 per week per student), travel, and lodging (up to \$2800 per student).

Program	Anticipated NSF Funding	Anticipated NIST Funding	Total Program Funding	Anticipated No. of Awards
EEEL	\$73,000	\$30,000	\$103,000	~16
MEL	\$56,000	\$22,000	\$78,000	~11
CSTL	\$41,000	\$54,000	\$95,000	~15
PL	\$85,000	\$50,000	\$135,000	~22
MSEL	\$80,000	\$0	\$80,000	~12
BFRL	\$69,000	\$30,000	\$99,000	~16
ITL	\$60,000	\$40,000	\$100,000	~17

The actual number of awards made under this announcement will depend on the proposed budgets. For all *SURF Gaithersburg Programs* described in this notice, it is expected that individual awards to institutions will range from approximately \$3,000 to \$70,000. Funding for student housing will be included in cooperative agreements awarded as a result of this notice.

The *SURF Gaithersburg Programs* are anticipated to run from May 24 through August 13, 2004; adjustments may be made to accommodate specific academic schedules (e.g., a limited number of 9-week cooperative agreements).

### III. ELIGIBILITY INFORMATION:

1. *Eligible Applicants* – NIST's *SURF Gaithersburg Programs* are open to colleges and universities in the United States and its territories with degree granting programs in materials

science, chemistry, engineering, computer science, mathematics, or physics. Participating students must be U.S. citizens or permanent U.S. residents.

2. *Cost Sharing or Matching* – The *SURF Gaithersburg Programs* do not require any matching funds.

#### IV. APPLICATION SUBMISSION INFORMATION:

1. *Address to Request Application Package* – For the *EEEL, MEL, CSTL, PL, MSEL, BFRL*, and *ITL SURF Gaithersburg Programs*, an application kit, containing all required forms and certifications, may be obtained by contacting Ms. Anita Sweigert, (301) 975-4200; websites for each program's application kit may be accessed through the following website:

<http://www.surf.nist.gov/surf2.htm>.

The NIST site in Boulder, Colorado also operates a SURF program, described later in this notice. The application process for the Gaithersburg and Boulder programs are distinctly separate. An application for one SURF program does not constitute that for the other, and applications will not be exchanged between the Gaithersburg and Boulder programs. If applicants wish to be considered at both sites, a separate application must be submitted to each program.

2. *Content and Form of Application Submission* – For all *SURF Gaithersburg Programs*, applicant institutions must submit one (1) signed original and two (2) copies of the proposal to:

Attn.: Ms. Anita Sweigert, Administrative Coordinator

National Institute of Standards and Technology

100 Bureau Drive, Stop 8400

Gaithersburg, MD 20899-8400

Tel: (301) 975-4200

E-mail: [anita.sweigert@nist.gov](mailto:anita.sweigert@nist.gov)

Website: <http://www.surf.nist.gov/surf2.htm>

3. *Submission Dates and Times* – All *SURF Gaithersburg Program* proposals must be received no later than 5:00 p.m. Eastern Standard Time on February 17, 2004.

#### V. APPLICATION REVIEW INFORMATION:

1. *Criteria* – For the *SURF Gaithersburg Programs*, the evaluation criteria are:

- (A) Evaluation of Student's Academic Ability and Commitment to Program Goals: Includes evaluation of completed course work; expressed research interest; compatibility of the expressed research interest with *SURF Gaithersburg Program* research areas; research skills; grade point average in courses relevant to the *SURF Gaithersburg Program*; career goals; honors and activities.
- (B) Evaluation of Applicant Institution's Commitment to Program Goals: Includes evaluation of the institution's academic department(s) relevant to the discipline(s) of the student(s).

Each of these factors is given equal weight in the evaluation process.

*2. Review and Selection Process* – All *SURF Gaithersburg Program* proposals are submitted to the Administrative Coordinator. Each proposal is examined for completeness and responsiveness. Substantially incomplete or non-responsive proposals will not be considered for funding, and the applicant will be notified in writing. The Program will retain one copy of each non-responsive application for three years for record keeping purposes. The remaining copies will be destroyed. Proposals should include the following:

(A) Student Information:

- (1) student application information cover sheet;
- (2) academic transcript for each student nominated for participation (it is recommended that students have a G.P.A. of 3.0 or better, out of a possible 4.0);
- (3) a statement of motivation and commitment from each student to participate in the 2004 SURF program, including a description of the student's prioritized research interests;
- (4) a resume for each student;
- (5) two letters of recommendation for each student;
- (6) verification of U.S. citizenship or permanent legal resident status for each student; and
- (7) verification of health coverage for each student.

(B) Information About the Applicant Institution:

- (1) description of the institution's education and research programs; and
- (2) a summary list of the student(s) being nominated.

Institution proposals will be separated into student/institution packets. Each student/institution packet will be comprised of the required application forms, including a complete copy of the student information and a complete copy of the institution information. The student/institution packets will be directed to the *SURF Gaithersburg Program* designated by the student as his/her first choice. Each *SURF Gaithersburg Program* will have three independent, objective NIST employees, who are knowledgeable in the scientific areas of the program, conduct a technical review of each student/institution packet based on the Evaluation Criteria for the *SURF Gaithersburg Programs* described in this notice. Each technical reviewer will recommend that each student/institution packet be placed into one of three categories: Priority Funding; Fund if Possible; and Do Not Fund. Each student/institution packet will then be placed into one of the three categories by the Program's Director, who will take into consideration the reviewers' recommendations, the relevance of the student's course of study to the program objectives of the NIST laboratory in which that *SURF Gaithersburg Program* resides as described in the Program Description and Objectives section of this notice, the relevance of the student's statement of commitment to the goals of the *SURF Gaithersburg Program*, and the availability of funding.

Student/institution packets placed in the Priority Funding category will be selected for funding in that *SURF Gaithersburg Program*. Student/institution packets placed in the Do Not Fund category will not be considered for funding.

Student/institution packets placed in the Fund if Possible Category will be considered for funding by the *SURF Gaithersburg Program* designated by the student as his/her second choice. In making selections for funding, the Director of the student's second choice *SURF Gaithersburg Program* will take into consideration the recommendations of the reviewers who conducted the technical reviews for the student's first choice *SURF Gaithersburg Program*, the program objectives of the NIST laboratory in which the student's second choice *SURF Gaithersburg Program* resides as described in the Program Description and Objectives section of this notice, the relevance of the student's statement of commitment to the goals of the *SURF Gaithersburg Program*, and the availability of funding.

Students not selected for funding by their first or second choice *SURF Gaithersburg Program*, and students who did not designate a second choice, will then be considered for funding from all *SURF Gaithersburg Programs* that still have slots available. In making selections for funding, the *SURF Gaithersburg Program* Directors will take into consideration the recommendations of the reviewers who conducted the technical reviews for the student's first choice *SURF Gaithersburg Program*, the program objectives of the NIST laboratory in which their *SURF Gaithersburg Program* resides as described in the Program Description and Objectives section of this notice, the relevance to the goals of the *SURF Gaithersburg Program*, and the availability of funding.

Student/institution packets placed in the Fund if Possible category, but not selected through the process described above, will not be funded.

The final approval of selected applications and award of cooperative agreements will be made by the NIST Grants Officer based on compliance with application requirements as published in this notice, compliance with applicable legal and regulatory requirements, compliance with Federal policies that best further the objectives of the Department of Commerce, and whether the recommended applicants appear to be responsible. Applicants may be asked to modify objectives, work plans, or budgets and provide supplemental information required by the agency prior to award. The decision of the Grants Officer is final.

The *SURF Gaithersburg Program* will retain one copy of each unsuccessful application for three years for record keeping purposes, and unsuccessful applicants will be notified in writing. The remaining copies will be destroyed.

#### VI. AWARD ADMINISTRATION INFORMATION:

Award administration information for this program may be found in the Award Administration Information section at the end of this notice.

VII. AGENCY CONTACT(S): *Technical questions for the SURF Gaithersburg Programs* should be directed to the following contact persons:

<u>Program</u>	<u>Contact Person(s)</u>	<u>Phone Number</u>	<u>E-Mail Address</u>
EEEL	Dr. David Newell	301-975-4228	david.newell@nist.gov
	Dr. Joseph Kopanski	301-975-2089	joseph.kopanski@nist.gov
MEL	Ms. Lisa Jean Fronczek	301-975-6633	lfronczek@nist.gov
CSTL	Dr. Albert Lee	301-975-2857	albert.lee@nist.gov
	Ms. Jeanice Brown Thomas	301-975-3120	jeanice.brownthomas@nist.gov
PL	Dr. Marc Desrosiers	301-975-5639	marc.desrosiers@nist.gov
	Dr. Paul Lett	301-975-6559	paul.lett@nist.gov
MSEL	Dr. Terrell A. Vanderah	301-975-5785	terrell.vanderah@nist.gov
	Dr. Robert Shull	301-975-6035	robert.shull@nist.gov
BFRL	Dr. Chris White	301-975-6016	cwhite@nist.gov
	Dr. Chiara Ferraris	301-975-6711	chiara.ferraris@nist.gov
ITL	Dr. Larry Reeker	301-975-5147	larry.reeker@nist.gov
	Mr. Tim Boland	301-975-3608	t.boland@nist.gov
	Dr. Isabel Beichl	301-975-3821	isabel.beichl@nist.gov

All grants related administration questions concerning this program should be directed to Joyce Brigham, NIST Grants and Agreements Management Division at (301) 975-6328 or [joyce.brigham@nist.gov](mailto:joyce.brigham@nist.gov).

Where websites are referenced within this notice, those without internet access may contact the appropriate Program official to obtain information.

***SURF NIST Boulder Program:***



I. FUNDING OPPORTUNITY DESCRIPTION: The objective of the *SURF NIST Boulder Program* is to expose promising undergraduate students to scientific research and stimulate them to pursue advanced degrees and subsequent careers in scientific and engineering disciplines. Students, competitively selected into the program, must show promise as present or future contributors to the mission of NIST. SURF students will work one-on-one with some of our nation's top scientists and engineers at NIST in Boulder, Colorado. It is anticipated that successful SURF students will move from a position of reliance on their research advisors to one of research independence during the 10 week period of the program. The program provides opportunities for our nation's next generation of scientists and engineers to engage in world-class scientific research, especially in ground-breaking areas of emerging technologies. This carries with it the hope of motivating individuals to pursue advanced degrees in physics, chemistry, materials science, engineering, mathematics, or computer science, and to consider research careers. The *SURF NIST Boulder Program* will help to forge partnerships with NSF and with post-secondary institutions that demonstrate strong, hands-on undergraduate science curricula, including those with a demonstrated commitment to the education of women, minorities, and students with disabilities. The NIST will establish cooperative agreements with participating colleges and universities to further the program's objectives.

The following are summaries of the technical activities in the participating NIST Boulder Laboratories:

ELECTRONICS AND ELECTRICAL ENGINEERING LABORATORY (EEL):

-measurement technology, standards, and traceability for the optoelectronic industry

- solutions to metrology problems using solid-state quantum effects, low temperatures to reduce thermal noise, and state-of-the-art lithography
- fundamental microwave quantities, high-speed microelectronics, electromagnetic compatibility, antennas, electromagnetic properties of materials, measurement methods and standards for the magnetic data storage and superconductor power industries

#### PHYSICS LABORATORY (PL):

- standards of time and frequency; dissemination of timing information using radio broadcasts and the Internet
- atomic and chemical physics, precision measurement, and laser and optical physics

#### CHEMICAL SCIENCE AND TECHNOLOGY LABORATORY (CSTL):

- measurements, standards, data, and models for the thermophysical/chemical properties of gases, liquids, and solids and for low-temperature refrigeration systems

#### MATERIALS SCIENCE AND ENGINEERING LABORATORY (MSEL):

- measurement methods and standards enhancing the quality and reliability of materials

#### INFORMATION TECHNOLOGY LABORATORY (ITL):

- design of experiments, modeling, analytical methods, and algorithms for science
- modern statistical experimental design, statistical modeling, data analysis, and process control procedures

The authority for the *SURF NIST Boulder* Program is as follows: 15 U.S.C. 278g-l authorizes NIST to fund financial assistance awards to students at institutions of higher learning within the United States. These students must show promise as present or future contributors to the missions of NIST.

II. AWARD INFORMATION: Funds budgeted for payment to students under these programs are stipends, not salary. The *SURF NIST Boulder Program* will not authorize funds for indirect costs or fringe benefits. The table below summarizes the anticipated annual funding levels from the NSF to operate the *SURF NIST Boulder* program, broken out by Laboratory, subject to program approval and availability of funds. In some Laboratories, anticipated NIST co-funding will supplement the number of awards supported. Program funding will be available to provide for the costs of stipends (\$4000 per student for 10 weeks), travel, and lodging (approximately \$1800 per student for 10 weeks).

Laboratory	Anticipated NSF Funding	Anticipated NIST Funding	Total Program Funding	Anticipated Number of Awards
EEEL	\$58,400	\$5600	\$64,000	8
PL	\$36,500	\$3500	\$40,000	5
CSTL	\$21,900	\$2100	\$24,000	3
MSEL	\$14,600	\$1400	\$16,000	2

ITL	\$14,600	\$1400	\$16,000	2
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The actual number of awards made under this announcement will depend on the proposed budgets. For the *SURF NIST Boulder Program* described in this notice, it is expected that individual awards to institutions will range from approximately \$4,000 to \$70,000. Funding for student housing will be included in cooperative agreements awarded as a result of this notice.

The *SURF NIST Boulder Program* is anticipated to run from June 1 through August 6, 2004; adjustments may be made to accommodate specific academic schedules (e.g., a limited number of 10 week cooperative agreements shifted to begin 2 weeks after the regular start in order to accommodate institutions operating on quarter systems).

### III. ELIGIBILITY INFORMATION:

1. *Eligible Applicants* – The *SURF NIST Boulder Program* is open to colleges and universities in the United States and its territories with degree granting programs in materials science, chemistry, engineering, computer science, mathematics, or physics. Participating students must be U.S. citizens or permanent U.S. residents.
2. *Cost Sharing or Matching* – The *SURF NIST Boulder Program* does not require any matching funds.

### IV. APPLICATION SUBMISSION INFORMATION:

1. *Address to Request Application Package* – For the *SURF NIST Boulder Program*, an application kit, containing all required forms and certifications, may be obtained by contacting Ms. Phyllis Wright, (303) 497-3244; the program’s application kit may be accessed through the following website: <http://surf.boulder.nist.gov/>.

The NIST headquarters site in Gaithersburg, Maryland also operates a SURF program, described above in this notice. The application process for the Gaithersburg and Boulder programs are distinctly separate. An application for one SURF program does not constitute that for the other, and applications will not be exchanged between the Gaithersburg and Boulder programs. If applicants wish to be considered at both sites, a separate application must be submitted to each program.

2. *Content and Form of Application Submission* – For the *SURF NIST Boulder Program*, applicant institutions must submit one signed original and two copies of the proposal to:

Ms. Phyllis Wright, Administrative Coordinator

National Institute of Standards and Technology

325 Broadway, Mail Stop 346.16

Boulder, CO 80305-3328

Tel: (303) 497-3244

E-mail: [pkwright@boulder.nist.gov](mailto:pkwright@boulder.nist.gov)

Website: <http://surf.boulder.nist.gov/>

3. *Submission Dates and Times* – All *SURF NIST Boulder Program* proposals must be received no later than 5:00 p.m. Mountain Standard Time on February 17, 2004.

#### V. APPLICATION REVIEW INFORMATION:

1. *Criteria* – For the *SURF NIST Boulder Program*, the evaluation criteria are:

(A) Evaluation of Student's Academic Ability and Commitment to Program Goals: Includes evaluation of completed course work; expressed research interest; compatibility of the expressed research interest with *SURF NIST Boulder Program* research areas; research skills; grade point average in courses relevant to the *SURF NIST Boulder Program*; career goals; honors and activities;

(B) Evaluation of Applicant Institution's Commitment to Program Goals: Includes evaluation of the institution's academic department(s) relevant to the discipline(s) of the student(s).

Each of these factors is given equal weight in the evaluation process.

2. *Review and Selection Process* – All *SURF NIST Boulder Program* proposals are submitted to the Administrative Coordinator. Each proposal is examined for completeness and responsiveness. Substantially incomplete or non-responsive proposals will not be considered for funding, and the applicant will be so notified. The Program will retain one copy of each non-

responsive application for three years for record keeping purposes. The remaining copies will be destroyed. Proposals should include the following:

(A) Student Information:

- (1) student application information cover sheet;
- (2) academic transcript for each student nominated for participation (it is recommended that students have a G.P.A. of 3.0 or better, out of a possible 4.0);
- (3) a statement of motivation and commitment from each student to participate in the *SURF NIST Boulder* program, including a description of the student's prioritized research interests;
- (4) a resume for each student;
- (5) two letters of recommendation for each student;
- (6) verification of U.S. citizenship or permanent legal resident status for each student; and
- (7) verification of health insurance coverage for each student.

(B) Information About the Applicant Institution:

- (1) description of the institution's education and research programs; and
- (2) a summary list of the student(s) being nominated.

Institution proposals will be separated into student/institution packets. Each student/institution packet will be comprised of the required application forms, including a complete copy of the student information and a complete copy of the institution information. The student/institution

packets will be directed to a review committee of NIST staff appointed by the *SURF NIST Boulder Program* Directors. Each *SURF Program* packet will be reviewed by three independent, objective NIST employees, who are knowledgeable in the scientific areas of the program and are able to conduct a technical review of each student/institution packet based on the Evaluation Criteria for the *SURF NIST Boulder Program* described in this notice. Each technical reviewer will recommend that each student/institution packet be placed into one of three categories: Priority Funding; Fund if Possible; and Do Not Fund. Each student/institution packet will then be placed into one of the three categories by the *SURF NIST Boulder Program* Directors, who will take into consideration the reviewers' recommendations, the relevance of the student's course of study to the program objectives of the NIST Boulder Laboratories as described in the Program Description and Objectives section of this notice, the relevance of the student's statement of commitment to the goals of the *SURF NIST Boulder Program*, and the availability of funding.

Student/institution packets placed in the Priority Funding category will be selected for funding in the *SURF NIST Boulder Program*. Student/institution packets placed in the Do Not Fund category will not be considered for funding.

Student/institution packets placed in the Fund if Possible Category will be considered for funding by the *SURF NIST Boulder Program* when possible. For example, when an award has been declined by another applicant, a back-up will be selected from student/institution packets in this category. In this case, it is likely that either the student's second or third choice of research



opportunity would be assigned. In making selections for funding, the *SURF NIST Boulder Program* Directors will take into consideration the recommendations of the reviewers who conducted the technical reviews, the program objectives of the NIST Boulder laboratory in which the student's requested research opportunity resides as described in the Program Description and Objectives section of this notice, the relevance of the student's statement of commitment to the goals of the *SURF NIST Boulder Program*, and the availability of funding.

Students not selected for funding for either their first, second or third choice of research opportunities, and students who did not designate a second or third choice, will then be considered for funding from all Boulder Laboratories that still have slots available. In making selections for funding, the *SURF NIST Boulder Program* Directors will take into consideration the recommendations of the reviewers who conducted the technical reviews, the program objectives of the NIST Laboratory in which their *SURF NIST Boulder SURF Program* research opportunity resides as described in the Program Description and Objectives section of this notice, the relevance to the goals of the *SURF NIST Boulder Program*, and the availability of funding.

Student/institution packets placed in the Fund if Possible category, but not selected through the process described above, will not be funded.

The final approval of selected applications and award of cooperative agreements will be made by the NIST Grants Officer based on compliance with application requirements as published in this notice, compliance with applicable legal and regulatory requirements, compliance with Federal

policies that best further the objectives of the Department of Commerce. Applicants may be asked to modify objectives, work plans, or budgets and provide supplemental information required by the agency prior to award. The decision of the Grants Officer is final.

The *SURF NIST Boulder Program* will retain one copy of each unsuccessful application for three years for record keeping purposes, and unsuccessful applicants will be notified in writing. The remaining copies will be destroyed.

VI. AWARD ADMINISTRATION INFORMATION:

Award administration information for this program may be found in the Award Administration Information section at the end of this notice.

VII. AGENCY CONTACT(S):      *Technical questions* for the Boulder Laboratories *SURF*

*Program* should be directed to the following contact person:

Ms. Phyllis Wright, Administrative Coordinator

National Institute of Standards and Technology

325 Broadway, Mail Stop 346.16

Boulder, CO 80305-3328

Tel: (303) 497-3244

E-mail: [pkwright@boulder.nist.gov](mailto:pkwright@boulder.nist.gov)

Website: <http://surf.boulder.nist.gov/>

All grants related administration questions concerning this program should be directed to Joyce Brigham, NIST Grants and Agreements Management Division at (301) 975-6328 or [joyce.brigham@nist.gov](mailto:joyce.brigham@nist.gov).

Where websites are referenced within this notice, those without internet access may contact the appropriate Program official to obtain information.

## VI. AWARD ADMINISTRATION INFORMATION:

The following Award Administration Information applies to all programs announced in this notice:

### 1. *Award Notices:*

A successful applicant will be notified of award through the receipt of an obligated/approved Financial Assistance Award document. The document, which will include the award period, the budget, special award conditions, and applicable policy and regulatory references that will govern the award, is sent to the successful applicant via surface mail and requires a counter-signature of an authorized official.

### 2. *Administrative and National Policy Requirements:*

#### a. **Catalog of Federal Domestic Assistance Name and Number:**

Measurement and Engineering Research and Standards--11.609.

b. The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of October 1, 2001 (66 FR 49917), as amended by the Federal Register notice published on October 30, 2002 (67 FR 66109), are applicable to this solicitation. On the form SF-424, the applicant's 9-digit Dun and Bradstreet Data Universal Numbering System (DUNS) number must be entered in the Applicant Identifier block. In addition, the following information is applicable to all programs described above.

c. **Collaborations with NIST Employees:** All applications should include a description of any work proposed to be performed by an entity other than the applicant, and the cost of such work should ordinarily be included in the budget.

If an applicant proposes collaboration with NIST, the statement of work should include a statement of this intention, a description of the collaboration, and prominently identify the NIST employee(s) involved, if known. Any collaboration by a NIST employee must be approved by appropriate NIST management and is

at the sole discretion of NIST. Prior to beginning the merit review process, NIST will verify the approval of the proposed collaboration. Any unapproved collaboration will be stricken from the proposal prior to the merit review.

**d. Use of NIST Intellectual Property:** If the applicant anticipates using any NIST-owned intellectual property, to carry out the work proposed, the applicant should identify such intellectual property. This information will be used to ensure that no NIST employee involved in the development of the intellectual property will participate in the review process for that competition. In addition, if the applicant intends to use NIST-owned intellectual property, the applicant must comply with all statutes and regulations governing the licensing of Federal government patents and inventions, described at 35 U.S.C. sec. 200-212, 37 CFR part 401, 15 CFR 14.36, and in section 20 of the Department of Commerce Pre-Award Notification Requirements, 66 FR 49917 (2001), as amended by the Federal Register notice published on October 30, 2002 (67 FR 66109). Questions about these requirements may be directed to the Counsel for NIST, 301-975-2803.

Any use of NIST-owned intellectual property by a proposer

is at the sole discretion of NIST and will be negotiated on a case-by-case basis if a project is deemed meritorious. The applicant should indicate within the statement of work whether it already has a license to use such intellectual property or whether it intends to seek one.

If any inventions made in whole or in part by a NIST employee arise in the course of an award made pursuant to this notice, the United States government may retain its ownership rights in any such invention. Licensing or other disposition of NIST's rights in such inventions will be determined solely by NIST, and include the possibility of NIST putting the intellectual property into the public domain.

**e. Funding Availability:** For all Financial Assistance programs listed in this notice, awards are contingent on the availability of funds.

**f. Initial Screening of all Applications:** All applications received in response to this announcement will be reviewed to determine whether or not they are complete and responsive to the scope of the stated objectives for each program. Incomplete or non-responsive applications will not be reviewed for technical

merit. The Program will retain one copy of each non-responsive application for three years for record keeping purposes. The remaining copies will be destroyed.

g. **Fees and/or Profit:** It is not the intent of NIST to pay fee or profit for any of the financial assistance awards that may be issued pursuant to this announcement.

h. **Paperwork Reduction Act:** The standard forms in the application kit involve a collection of information subject to the Paperwork Reduction Act. The use of Standard Forms 424, 424A, 424B, SF-LLL, CD-346, SF-269, and SF-272 have been approved by OMB under the respective Control Numbers 0348-0043, 0348-0044, 0348-0040, 0348-0046, 0605-0001, 0348-0039, and 0348-0003.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

i. **Research Projects Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects:** Any proposal that includes research involving human subjects, human tissue, data or recordings involving human subjects must meet the requirements of the Common Rule for the Protection of Human Subjects, codified for the Department of Commerce at 15 CFR part 27. In addition, any proposal that includes research on these topics must be in compliance with any statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other federal agencies regarding these topics, all regulatory policies and guidance adopted by DHHS, FDA, and other Federal agencies on these topics, and all Presidential statements of policy on these topics.

On December 3, 2000, the U.S. Department of Health and Human Services (DHHS) introduced a new Federalwide Assurance of Protection of Human Subjects (FWA). The FWA covers all of an institution's Federally-supported human subjects research, and eliminates the need for other types of Assurance documents. The Office for Human Research Protections (OHRP) has suspended processing of multiple project assurance (MPA) renewals. All existing MPAs will remain in force until further notice. For information about FWAs, please see the OHRP Web site at



<http://ohrp.osophs.dhhs.gov/humansubjects/assurance/fwass.htm>

In accordance with the DHHS change, NIST will continue to accept the submission of human subjects protocols that have been approved by Institutional Review Boards (IRBs) possessing a current, valid MPA from DHHS. NIST also will accept the submission of human subjects protocols that have been approved by IRBs possessing a current, valid FWA from DHHS. NIST will not issue a single project assurance (SPA) for any IRB reviewing any human subjects protocol proposed to NIST.

On August 9, 2001, the President announced his decision to allow Federal funds to be used for research on existing human embryonic stem cell lines as long as prior to his announcement (1) the derivation process (which commences with the removal of the inner cell mass from the blastocyst) had already been initiated and (2) the embryo from which the stem cell line was derived no longer had the possibility of development as a human being. NIST will follow guidance issued by the National Institutes of Health at <http://> for funding such research.

**j. Research Projects Involving Vertebrate Animals:** Any proposal that includes research involving vertebrate animals

must be in compliance with the National Research Council's ``Guide for the Care and Use of Laboratory Animals'' which can be obtained from National Academy Press, 2101 Constitution Avenue, NW., Washington, DC 20055. In addition, such proposals must meet the requirements of the Animal Welfare Act (7 U.S.C. 2131 et seq.), 9 CFR parts 1, 2, and 3, and if appropriate, 21 CFR part 58. These regulations do not apply to proposed research using pre-existing images of animals or to research plans that do not include live animals that are being cared for, euthanased, or used by the project participants to accomplish research goals, teaching, or testing. These regulations also do not apply to obtaining animal materials from commercial processors of animal products or to animal cell lines or tissues from tissue banks.

**k. Type of Funding Instrument:** The funding instrument will be a grant or cooperative agreement, depending on the nature of the proposed work. A grant will be used unless NIST is ``substantially involved" in the project, in which case a cooperative agreement will be used. A common example of substantial involvement is collaboration between NIST scientists and recipient scientists or technicians. Please see the DoC Grants and Cooperative Agreements Interim Manual which may be found on the Internet at <http://frwebgate.access.gpo.gov/cgi-bin/leaving.cgi?from=leavingFR.html&log=linklog&to=http://www.osec.doc.gov/oebam/GCA>

[manual.htm](#). NIST will make decisions regarding the use of a cooperative agreement on a case-by-case basis. Funding for contractual arrangements for services and products for delivery to NIST is not available under this announcement.

If a proposal submitted under this Notice is not properly funded by a grant or cooperative agreement, NIST will consider whether the proposal may be appropriately funded through procurement, interagency agreement, or another mechanism that does not involve a grant or cooperative agreement. NIST's review and consideration of that proposal will be consistent with the requirements applicable to that funding mechanism.

l. **Indirect Costs:** For the SURF Gaithersburg and Boulder Programs, no Federal funds will be authorized for Indirect Costs (IDC) nor fringe benefits; however, an applicant may provide for IDC and/or fringe benefits under his/her portion of Cost Sharing.

m. **Executive Orders:** This funding notice was determined to be not significant for purposes of Executive Order 12866.

It has been determined that this notice does not contain policies with federalism implications as that term is defined in Executive Order 13132.

Applications under these programs are not subject to Executive Order 12372, ``Intergovernmental Review of Federal Programs."''

n. **Administrative Procedure Act/Regulatory Flexibility Act:** Notice and comment are not required under the Administrative Procedure Act (5 U.S.C. 553) or any other law, for notices relating to public property, loans, grants, benefits or contracts (5 U.S.C. 553(a)). Because notice

and comment are not required under the Administrative Procedure Act, a Regulatory Flexibility Analysis is not required and has not been prepared for this notice, 5 U.S.C. 601 et seq.

o. **Limitation of Liability:** Funding for the programs listed in this notice is contingent upon the availability of Fiscal Year 2004 appropriations. NIST issues this notice subject to the appropriations made available under the current continuing resolution, H.J. Res. 69, "Making continuing appropriations for the fiscal year 2004, and for other purposes," Public Law 108-84, as amended by H.J. Res. 75, Public Law 108-104, H.J. Res. 76, Public Law 108-107, and H.J. Res. 79, Public Law 108-135. NIST anticipates making awards for the programs listed in this notice provided that funding for the programs is continued beyond January 31, 2004, the expiration of the current continuing resolution. In no event will NIST or the Department of Commerce be responsible for proposal preparation costs if these programs fail to receive funding or are cancelled because of other agency priorities. Publication of this announcement does not oblige NIST to award any specific project or to obligate any available funds.

The following are examples of the Special Award Conditions that may be applied to the recipients award document:

a. **Program Income:** Program income, as defined at 15 CFR 14.24 (non-profits and colleges) or 15 CFR 14.24.25 (states), earned during the award period shall be retained by the recipient and shall be deducted from the total allowable costs to determine the net allowable costs. Program income shall be used for current costs unless the Grants Officer authorizes otherwise. Program income, which the Recipient did not anticipate at the time of the award,

must be used to reduce the Department's contribution rather than to increase the funds committed to the project.

**b. Supplemental Information to DoC, Financial Assistance Standard Term and Condition, K.02, titled "Rights to Inventions."** The Recipient shall submit to the National Institute of Standards and Technology a final patent report listing all inventions disclosed or a certification that no subject inventions were disclosed during the award period. This report is due to the Grants Officer within 90 days from the expiration date of this award.

**c. General Publication Guidelines:**

(a) Whenever possible, the results of the research should be published in the open scientific literature in such a way as to be generally available to American Scientific Libraries.

(b) The Federal Program Officer is responsible for insuring appropriate dissemination of information resulting from a grant/cooperative agreement.

(c) The Journal of Research of NIST may be used as a medium of publication, but the Principal Investigators are free to choose the place of publication in the best scientific interest.

(d) In such publications, acknowledgment shall be made of sponsorship by NIST. Normally this is done by a footnote reading, "This work was performed under the sponsorship of the U. S. Department of Commerce, National Institute of Standards and Technology," or words to that effect.

(e) If the publication is copyrighted, the statement "Reproduction of this article, with the customary credit to the source, is permitted" should be added.

(f) Manuscripts intended for publication shall be forwarded to the Federal Program Officer for review prior to release.

(g) When issuing statements, press releases, requests for proposals, bid solicitations and other documents describing projects or programs funded in whole or in part with Federal money, all recipients receiving Federal funds, including States and local governments, shall clearly state the:

- (1) percentage of the total costs of the program or project which will be financed with Federal money;
- (2) dollar amount of federal funds for the project or program; and,
- (3) percentage and dollar amount of the total costs of the project or program financed by non-federal sources.

d. **Interest:** This award is subject to 15 CFR 14.22 requiring recipients of Federal financial assistance to maintain advances of Federal funds in interest bearing accounts. Interest earned on Federal advances deposited in such accounts (with the exception of \$250 per year, which may be retained for administrative expenses) shall be remitted promptly, but not less frequently than quarterly to NIST at the address listed below:

NIST Accounts Receivable

100 Bureau Drive, STOP 3751

Building 101, Room A809

Gaithersburg, MD 20899-3751

e. **Supplementary Condition to DoC Standard Term and Condition D.01, titled, “Organization-wide, Program Specific, and Project Audits, paragraph b.:** Since the period of this award is less than two years and the recipient is a for-profit organization, the NIST requires that the recipient provide the Grant Officer with one of the following audits:

(1) An organization-wide audit that is conducted by an independent Certified Public Accountant (CPA) in accordance with Generally Accepted Government Auditing Standards, that encompasses the period of performance of this award and provides for a review of the costs associated with this award and all other revenue and income of the recipient, and certification that the recipient has complied with all the terms and conditions related to the financial management standards found at 15 CFR 14.21; or

(2) A project audit conducted by an independent CPA in accordance with Generally Accepted Government Auditing Standards, similar to that found in OMB, Circular A-133 and that:

(i) provides for a review and determination of the appropriateness of the costs associated with this award in accordance with the applicable cost principles as specified on the cover sheet of this award;

(ii) provides for a new review and determination of the recipient’s compliance with the terms, conditions, laws and regulations governing this award; and

(iii) reviews the financial statements of the organization and provides an opinion.

The Recipient shall submit either (1) or (2) above to the Grants Officer within 90 days of the expiration date of this award.

f. **Return Payments for Funds Withdrawn through ASAP:** Funds that have been withdrawn through ASAP may be returned to ASAP via the Automated Clearing House (ACH) or via FEDWIRE. The ACH or FEDWIRE transaction can only be done by the Recipient's financial institution. Full or partial amounts of payments received by a Payment Requestor/Recipient Organization may be returned to ASAP. All funds returned to the ASAP system will be credited to the ASAP Suspense Account. The Suspense Account allows the Regional Financial Center to monitor returned items and ensure that funds are properly credited to the correct ASAP account. Returned funds that cannot be identified and classified to an ASAP account will be dishonored and returned to the originating depository financial institution (ODFI).

It is essential that the Payment Requestor/Recipient Organization provide its financial institution with ASAP account information (ALC, Recipient ID and Account ID) to which the return is to be credited. Additional detailed information can be found at <http://www.fms.treas.gov/asap/pay-return2.pdf>

g. **Supervision of the Recipient's Researchers on the NIST Site:** The Recipient shall control the means and manner of its researcher(s)' activities, including research conducted on the NIST campus. The Recipient shall provide a salary, stipend, or other funding to the researcher(s), and shall establish the researcher(s)' work schedule and tenure. The Recipient is the supervisor of record for the researcher(s), and shall coordinate with NIST as needed to ensure that the research remains consistent with NIST program objectives. Staff and affiliates of the Recipient



conducting research on a NIST site shall sign and abide by the terms of the NIST Guest Researcher Agreement.

NIST shall collaborate on the research as described in a Special Award Condition, *titled NIST Participation*, (that will change accordingly per award), and shall coordinate with the Recipient as needed regarding progress on the research. NIST shall have no firing or other terminating authority over the employment or affiliation status of the Recipient's researcher(s). Any issues related to performance or conduct in the laboratory involving researcher(s) shall be immediately reported to the Recipient. Any suspension or termination action on this award will comply with 15 CFR 14.60-.62 and the Department of Commerce Financial Assistance Standard Terms and Conditions, B.02 and B.05.

h. The Recipient shall comply with the requirements found in the Notice of Funding Availability published in the Federal Register and incorporated by reference into this award.

i. **NIST Implementation of Department of Commerce,  
Financial Assistance Standard Terms and Conditions, dated  
October 2001, Section A.02, Award Payments**

(1) The advance method of payment shall be authorized unless otherwise specified in a special award condition.

(2) Payments will be made through electronic funds transfers, using the Department of Treasury's Automated Standard

Application for Payment (ASAP) system, and in accordance with the requirements of the Debt Collection Improvement Act of 1996. The following information is required when making withdrawals for this award(1) ASAP account identification (id) = award number found on the cover sheet of this award; (2) Agency Location Code (ALC) = 13060001; and (3) Region Code = 01. Recipients do not need to submit a "Request for Advance or Reimbursement" (SF-270) for payments relating to this award. If you are not enrolled as an ASAP Recipient Organization you must complete the enrollment process with your Federal Reserve Bank, Regional Finance Center. Enrollment applications and information can be found at <http://www.fms.treas.gov/asap/handbook.html>. If you need a paper copy of the enrollment documentation please contact the Grant Specialist responsible for this award.

(3) Advances taken through the ASAP shall be limited to the minimum amounts necessary to meet immediate disbursement needs. Advanced funds not disbursed in a timely manner must be promptly returned, via an ASAP credit, to the account from which the advanced funding was withdrawn. Advances shall be for periods not to exceed 30 days.

(4) This award has the following control or withdraw  
limits set in ASAP

\_\_\_\_\_ None

\_\_\_\_\_ Agency Review required for all  
withdrawals (see explanation below)

\_\_\_\_\_ Agency Review required for all  
withdrawal requests over \$\_\_\_\_\_ (see  
explanation below)

\_\_\_\_\_ Maximum Draw Amount controls (see  
explanation below)

\$\_\_\_\_\_ each month

\$\_\_\_\_\_ each quarter

\$\_\_\_\_\_ each year

### 3. *Reporting:*

a. The Department of Commerce Financial Assistance Standard Terms and Conditions dated October, 2001 provides policy guidelines for recipients. Financial and Programmatic

Reporting Requirements for grants and cooperative agreements are outlined below. Please see the Department of Commerce Financial Assistance Standard Terms and Conditions dated October, 2001 which can be found on the Internet at <http://www.osec.doc.gov/oebam/standards.htm>

b. Financial Requirements - Financial Reports

1. The Recipient shall submit a "Financial Status Report" (SF-269) on a semi-annual basis for the periods ending March 31 and September 30, or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-269 shall be submitted within 90 days after the expiration date of the award.

2. The Recipient shall submit a "Federal Cash Transactions Report" (SF-272) for each award where funds are advanced to Recipients. The SF-272 should be submitted on a quarterly basis for periods ending March 31, June 30, September 30, and December 31. The SF-272 is due 15 working days following the end of each reporting period unless otherwise specified in a special award condition.

3. All financial reports shall be submitted in triplicate (one original and two copies) to the Grants Officer.

c. Programmatic Requirements - Performance (Technical)  
Reports

1. **For *SURF Gaithersburg and Boulder Programs* - Deviation to the DoC, Standard Term and Condition B.01, entitled, "Performance (Technical) Reports"**

The technical abstract prepared by the student at the end of the SURF program shall constitute and fulfill the requirement for a final technical report. The abstract is the only required report that shall be submitted by the recipient. In addition, the Recipient must submit a SF-269 at the end of the program.

Dated:

Arden L. Bement, Jr.  
Director, NIST